

## **Report for 2005GU59B: Water System Operation and Maintenance Training for Pohnpei State FSM.**

### **Publications**

- There are no reported publications resulting from this project.

### **Report Follows**

**Project Title**

Water System Operation and Maintenance Training for Pohnpei State FSM

**Problem and Research Objectives**

The need for effective information transfer and training on all aspects of water resources is an immediate need in the Federated States of Micronesia (FSM). Micronesia is an area where formal reports and professional publications are simply not effective information transfer vehicles. In this part of the world, the most effective means of information transfer is one-on-one or small group discussions and workshops. In response to these unique circumstances, a special training program was designed for FSM. The training concentrated on the water system operation and maintenance problems experienced in Pohnpei State, FSM. The specific objective of this training was to increase the technical understanding of operation and maintenance of pumps and automatic valves in the water supply and wastewater collection systems operated by the Pohnpei Utility Corporation (PUC). Since other utilities in FSM experience similar problems, the training was made available to utility personnel from Chuuk, Yap and Kosrae State. The need for water resources related training continues to be given a high priority by the FSM advisory council. This specific training was requested by the PUC as part of the WERI advisory council meeting held in November 2004.

**Methodology**

The training project consisted of a one week long workshop that covered various water supply operations and maintenance topics. As can be seen from the schedule below, the training provided a mix of classroom, laboratory and field site instruction and hands-on activities. Pohnpei Utility Corporation provided the required classroom and shop space required to carry out the training.

The instructor who led the classroom, shop and field site sessions was Mr. Mack McPherson from Hawaii Engineering Services. This Hawaii based company specializes in pumping and water distribution and waste water system sales, repair, and maintenance. They have had a long term association with the various utilities in Micronesia.

Upon completion of the workshop the attendees had a much better understanding of key operation and maintenance activities required to sustain functioning water distribution and wastewater collection systems with special emphasis on pumps and automatic regulating valves.

**Table 1. Training Topics for Water and Waste Water System Repair and Maintenance Training**

SESSION	TOPICS
Day 1 Morning	Site inspection of water supply and waste water disposal facilities
Day 1 Afternoon	Pump station equipment design, operation, and maintenance
Day 2 Morning	On site hands on training covering inspection, testing, and preventative maintenance
Day 2 Afternoon	Shop hands on training at PUC Shop covering preventative and overhaul maintenance of existing pumps and controls (Session 1)
Day 3 Morning	Shop hands on training at PUC Shop covering preventative and overhaul maintenance of existing pumps and controls (Session 2)
Day 3 Afternoon	Pressure regulating (PRV) and altitude valves: purpose and theory of operation
Day 4 Morning	On site hands on training covering inspection, testing, and preventative maintenance of PRVs and altitude valves
Day 5 Afternoon	Shop hands on training at PUC Shop covering preventative and overhaul maintenance of existing PRVs and altitude Valves

### **Principal Findings and Significance**

Twenty people working at Pohnpei Utility Corporation (PUC) and the other utilities in the Federated States of Micronesia participated in the training. The training covered pump and automatic valve repair and maintenance. The sessions covered general topics on pump repair for well pumps, booster pumps and pumps used in the wastewater collection system and automatic valves within the distribution systems. Repair training was carried out on the specific pumps and valves in the Pohnpei system. Since the water systems in the other states are similar to the Pohnpei system the training was meaningful to trainees from the other states.

The net results of this training will be better management of one of Pohnpei island's most valuable resources, its water. Specific results will be a more reliable water supply and wastewater disposal system. With better pump maintenance practices the reliability of the pumping components will be much greater. With better operation of the automatic valves in the systems the tanks will be operated more efficiently and pressure will be maintained at levels that assure good operation of the system.

As always, the goal of the training was to help provide the local government with on-island capabilities to maintain water supplies that that can provide safe drinking water for the entire island on a 24-hour basis.



Figure 1 Students performing field maintenance on pressure regulating valve



Figure 2 Students performing shop repair procedures on water system valve